AI Planning
Exercise Sheet 1

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Students: Axel Perschmann, Tarek Saier

Exercise 1.1

	districts	landing platforms	boys
King's Landing	8	3	4
Winterfell	2	1	1
Lannisport	6	1	3
Meereen	12	1	6
Volantis	12	1	6
#	40	7	20

Number of states for errand boys $= 8^4 * 2^1 * 6^3 * 12^6 * 12^6$
Number of states for dragons $= 7^3$
Number of states for 30 packages $= 40^{30}$

The number of possible different states (size of the state space):
$statespacesize = (8^4 * 2 * 6^3 * 12^6 * 12^6) * 7^3 * (40^{30})$
$statespacesize = 6.239 * 10^{69}$

Traverse time needed to visit all $6.239 * 10^{69}$ states:
$t = 6.239 * 10^{69} * 10^{-6} s$
$t = 6.239 * 10^{63} s$

Exercise 1.2

1. How is a relaxed plan — "remembering" old values and thus not truly representative of a real solution — used to guide the search for an actual plan?

2. What is a "casual graph" and a "local minimum under h^+"?